

FIGURE 1

1 TTGCGGTTTGGATTGGGACGGCCGGCGGATGAAGCTGGCGTCGATCTACGGCGAC + 60
 a AACGGCAAAACCTAACCCCTGGCGGGCGCGTACTTGGACGGCAGCTAGATGGGGCTG
 L P P W N W D A P G G M K L P S I Y A D -
 61 CCTTCGTCCTGGCTCTATGACAAGTTGGCGACGCCAACGACCCAGCGCGGCGCTGGTC + 120
 a GGAAGCAGGAGGAGAGATACTGGTCAAGCGCTGGCTGGTGGCGGCCAGGAGCAG
 P S S S L Y D K F R D A K H Q P P V L V -
 121 GACCTCGACTACAACGGAACCGACCCTAGTTCACOGACGAGCAGACATCGATCAGAAC + 180
 a CTGGAGCTGATGTTGCCCTGGCTGGATCAAAGTGGCTGGCTCGCTAGCTAGTCTTG
 D L D Y N G T D P S F T D A E Q I D Q N -
 181 CTCAAGATCATGTACGGCAGGTGATCTCAACGGCAAGACGCCGTTGCTCTCTAGGC + 240
 a GAGTTCTACTACATGGCGTCCACTAGAGGTGGCTGGCTGGCAACGAGAAGAATCCG
 L K I M Y R Q V I S N G K T P L L P L G -
 241 TCGGCTTACCGTGGCGGCGACAACCCAAACCCAGGCGGGGCTGGCTGGAGAACATACCA + 300
 a AGCCGAATGGCAACGGCGCTGTTGGGTTGGGGCCCGCCCGAGCGAGGCTCTGTATGGT
 S A Y R A G D N P N P G A G S L E N I P -
 301 CACGGCCCCCTCCACGGCTGGACTGGCGACAGAACCCAAATCTGGAGGACATGGGC + 360
 a GTGCCGGGGCAGGTGGCCACCTGACCGCTGCTTGGTTGGTTAGAGCTCCCTGACCG
 H G P V H G W T G D R S Q P N L E D M G -
 361 AACTCTACTCCGGGGCGCGACCCCTATCTTCTTGGCCACCATTCAAATGTCGATAGC + 420
 a TTGAAGATGGCGCCCGCGCTGGATAGAAGAAGCGGGTGGTAAAGTTACAGCTATCG
 N P Y S A G R D P I F F A H H S N V D S -
 421 ATGGG
 a 426
 TACACC
 a N W -

FIGURE 2

3/27

1 GTCGCTCTCTAGGCTGGCTAACGTCGGCAGACAAACCAACCCCCGGCGGGGCTC
 b CAACGAGAAGAATCCGAGCCGAATGGCACGGCGCTGTGGGTTGGGCGGGCGAG
 L L F L G S A Y R A G D N P N P G A G S -
 61 GCTCGAGAACATACCAACAGGGCCCGTCCACGGTGGACTGGCACAGAAACCAACCAA
 b CGAGCTCTTGTATGGTGTGCGGGGCAGGTGCCACCTGACCGCTGTCTTGGTTGGGTT
 L B N I P H G P V H G W T G D R N Q P N -
 121 TCTCGAGAACATGGGCAACTCTACTCTCGCGGGCGCGACCCATCTTCTTGGCCACCA
 b AGAGCTCTGTACCCGGTGAAGATGAGGGCGCCCGCGCTGGATAGAAGAAGGGGTGGT
 L E D M G N F Y S A G R D P I F F A H H -
 181 TTCAACCGTGAACCGCATGTGGTACTGTGGGAAAGCTGGGGAAAGCATCAGGACTT
 b AAGTTTCCAGCTGGGATCACCCATGAACACCCCTCTCGAGCGCCCTCGTAGCTCTGAA
 S N V D R N W Y L W K K L G G K H Q D F -
 241 TAACGATAAGGACTGGCTAACACCCACCTCTCTCTACGACGAGAACATGCTGACTTAGT
 b ATTGCTATTCCTGACCGAGTTGTGGAAAGGAGAACATGCTGCTCTACGACTGAATCA
 N D K D W L N T T F L F Y D E N A D L V -
 301 TCGAGTCACCCCTAACGGACTGCTTCAGCGGAGTGGCTCGTACGATTACCAAGGCT
 b AGCTCAGTGGGAGTTCTGACGAACGTCGGCTCACCGAACGCAATGCTATGGTTCTGCA
 R V T L K D C L Q P R W L R Y D Y Q D V -
 361 CGAGATCCCGTGGCTGAAGACCCGGCGACTCCAAAGCCTTGAAGGGCGAGAAAACCGC
 b GCTCTAGGGCACCGACTCTGGGCCGCTGAGGGTTCTGGAAACTCCTGGCTCTGGCG
 S I P W L K T R P T P K A L K A Q K T A -
 421 AGCGAAAAACACTGAAAGCTACAGCAGAGACGCGGTTCCCGGTGACGCTGCAATCCGCGGT
 b TCGCTTTTGTGACTTTGCGATGTCGTCCTGCGGCAAGGCCACTGCGACGTTAGGGCCCA
 A K T L K A T A E T P F P V T L Q S A V -
 481 GAGCAACGACGGTGAGGGGCCAGGTATCGAGGAGCGCAAGGAGAAGGAAGAGGAAGA
 b CTOGTGCTGCCACTCTGGGTTCCATAGCTCTCGCGGTTCTCTCCCTCTCTCTCT
 S T T V R R P K V S R S G K B K E E E -
 541 GGAGGTCTCATGTTGAGGGATCGAGTTGACCGCGACTACTCTCATAAAGTTCGACGT
 b CCTCCAGGAGTAGCACCTCCCTAGCTCAAGCTGGCGTGTAGTAAGTATTCAAGCTGCA
 E V L I V E G I E F D R D Y F I K F D V -
 601 CTTCGTGAACGCCACCGAGGGTGAGGGCATCAACGCGGGCGGCCAGCGAGTTGGGGCAG
 b GAAGCACTTGGGTGGCTCCACTCCGTAGTGGCGCCCGGGTGGCTCAAGCCCCCGTC
 F V N A T E G E G I T P G A S E F A G S -
 661 CTTCGTCAACGTCCCCACAGCACAGCACAGCAAGAAGGAGAAGAAGCTGAAGACGAG
 b GAAGCAGTTGAGGGCGTGTCTCGTGTCTGTTCTCTCTCTCTGACCTCTGTC
 F V N V P H K H K H S X K B K K L K T R -
 720

FIGURE 3-1

4/27

MAP of: bpa34 check: 1607 from: 1 to: 925 August 22, 1997

FIGURE 3-2

5/27

GTTGCTCTCTAGGCTGGCTTACCGTGCGGGTGACCAGCCCTACCCCGGGCGGGGATC
 1 CAACGAGAAGAAATCCGAGCGGAATGGCACGGCACTGGTCAAGATTGGGCGCGGCCCTAG
 L L F L G S A Y R A G D Q P N P G A G S -
 b
 CATCGAGAACATGCCGACAACAACTGGCACTTGTGGACCGCGACCGCACCCAGCCAA
 61 GTAGCTCTGTACGGCGTGTGTCACGTGAAACACCTGGCGCTGGCGTGGTGGGTT
 I B N M P H N N V H L W T G D R T Q P N -
 b
 CTTCGAGAACATGGGACCCCTCAOGOGGCGGCGCGACCCCATCTCTTGGCCACCA
 121 GAAGCTCTGTACCGTGGAAAGATGCGCGCGCGCGCGCGCGCGCGCGCGCGCGCG
 F E N M G T P Y A A A R D P I F F A H H -
 b
 CGCCAAACATGACCGAACATGGTACCTGTGGAAAGAACGCTACCGAGGAAGCACCAGGACT
 181 CGCGTTGTAGCTGGCTACACCATGGACACCCCTTCTGGAGTGTCTTGTGGTCTGAA
 A N I D R M H Y L W K K L S R K H Q D F -
 b
 CAATGACTCGGACTGGCTCAAGCTTCTTCTTCTACGACGAGAACCGCGACTTGT
 241 GTTACTGAGCTGACCGAGTTCTGAAGGAAGGAGAACGATGCTGCTTGTGGCTGAATCA
 N D S D W L K A S F L F Y D E N A D L V -
 b
 TCGGGTCACGGCTAAGGACTGCTGGAGACCGACTGGCTGGCTACAGTACCAAGAGCT
 301 AGCCCACTGCCAGTCTCTGACCGAACCTCTGGCTACCGACGGCATGTGCACTGGTCTGCA
 R V T V K D C L E T B W L R Y T Y Q D V -
 b
 GAAGATCCCATGGGCGAACACCCGACCGACCGACTCCAAAGCTGGCAAGGGAGGGAAAGCGGG
 361 CTTCTAGGGTACCGCTTGTGGCTGGCTGAGGGTTGAGGGTTCOGCTCTTGTGGCC
 K I P H A N T R P T P K L A K A R K A G -
 b
 CAGCAGATCGCTGAAAGCCACCGCGGAGGTGCACTGGAGGCTGGCAAGGAGAAGGAAAGCGGG
 421 GTCTCTAGGGTACCGCTTGTGGCTGGCTGAGGGTTGAGGGTTCOGCTCTTGTGGCC
 S R S L K A T A E V Q F P V T L E S P V -
 b
 CAAAGTGAAGGTGAAGAGGCCAAGGTGGGAGGGAGCGGCAAGGAGAAGGAAAGATGAGGA
 481 GTTTCACTGCCACTTCTCGGGTTCCACCCCTCTGGCTTCTCTTCTACTCT
 K V T V K R P K V G R S G K B K E D E E -
 b
 GGAGATACTCATAGTGGAGGGGATCGAGTTGACACGGACTACTTCAAGTTCGACGT
 541 CCTCTATGAGTATCACCTCCCTAGCTCAAGCTGGCGTGTAGTAAAGTAGTTCAAGCTGCA
 E I L I V E G I E F D R D Y F I K F D V -
 b
 CTTCTGAAACGCGACGGAGGGCGACGGCATCACGGCGGGGCCAGTGAGTTGGCGGAG
 601 GAAGCACTTGGCTGGCTCCCGTGGCGTGTAGTGGCGCCCGGTCACTCAAGCGGCCGTC
 F V N A T E G D G I T A G A S E F A G S -
 b
 CTTCTGAAACGTCGCGACAAGCACAAGCACCGCAAGGATGAGAATAAGCTGAAGACGAG
 661 GAAGCACTTGGCTGGCGTGTAGTGGCGCCCGGTCACTCAAGCGGCCGTC
 F V N V P H K H K H R E D E N K L K T R -
 b

FIGURE 4-1

6/27

721 GCTGTGTCGGAAATCACCGACCTGCTGGAGGACATCGGOGGGAGGACGGACAGACGGT
b -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 780
CGACACAGACCCCTTAGTGGCTGGACGAGCTCCCTGTAGCCGCGCCTCTGCTGCTGCGCA
b L C L G I T D L L E D I G A E D D D S V -

781 GCTCGTCACCATCGTGGCGAAGGCAGGCAAAGGAAAGGTGTCCGTGGCGGTCTTCGGAT
b -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 840
CGAGCAGTGGTACCGACGGCTTCCGTCCCTTCCACAGGCAGCCGCCAGAACGCTA
b L V T I V P K A G K G K V S V G G L R I -

841 TGACTTTCCAAGTGAGGAAATAAAAGAATTACCGTGGCGTGCCTGCTTCAATGTACGA
b -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 900
ACTGAAAAGGTTCACTCCTTATTTCTTAAGTGCACGGCACGGACAAAGTTACATGCT
b D F S K * G N K R I H V P C L L S M Y E -

901 ATAAAAATAAGAGTCATCATCACCGACCATGGTTCTACTTTAAAAAAAAAAAAAAA
b -----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 960
TATTTTATTCACGTAGTAGTGGCTGGTACCAAGATGAAATTTTTTTTTTTTTTT
b * N K S A S S P T M V L L * K K K K K -

MAP of: bpo35 check: 1637 from: 1 to: 960 August 25, 1997

FIGURE 4-2

GATCGGACGTTGCGCATATTGGAACTGGGATCATCCAAAGGGCATGGCTTGC
 1 a 60
 CTAGGCTGCAAACGCAACGGTATAACCTTGACCCCTAGTAGGTTCCCGTACGCAAACGGT
 D P T F A L P Y W N W D H P K G M R L P -

 CACATGTTGATCAACCAAACGTGACCTGATCTTACCGATCCAAGAACGTAACCAAGAA
 61 a 120
 GTGTACAAACTAGTTGGTTGACATGGGACTAGAAATGCTAGGTTCTGATTTGGTTCTT
 H M F D Q P N V Y P D L Y D P R R N Q E -

 CACCGCGGTTCTGTAATCATGGACCTGGTCATTTGGTCAGAACGTGAAAGGAACGTGAC
 121 a 180
 GTGGCGCCAAGACATTAGTACCTGGAACCGTAAACAGTTCTGCACTTTCTTGA
 H R G S V I M D L G H F G Q D V K G T D -

 TTGCAAATGATGAGCAATAACCTTACTCTAAATGTATGTCAAATGATTACCAATTACCA
 181 a 240
 AACGTTTACTACTCGTTATTGGAAATGAGATTACATAGCACTTAACTAATGGTTAAGTGGT
 L Q M M S N N L T L M Y R Q M I T N S P -

 TGTCCACAACTCTTTOGGTAAGCCATATTGTACGGAAAGTTGGACCCAAACAGGGCAG
 241 a 300
 ACAGGTGTTGAGAAAAGCCATTGGTATAACATGCCCTCACCTGGGTTTGGTCCCGTC
 C P Q L F P G K P Y C T E V G P K P G Q -

 GGAGCTATTGAAAACATCCCTCATACTCTGTCCACATTGGGTTGGTAGTAAGCCTAAT
 301 a 360
 CCTCGATAACTTTGTAGGGAGTATGAGGACAGGTGTAACCCAAACCATATTGGGATT
 G A I E N I P H T P V H I W V G S K P N -

 GAGAATAACTGTAAAAACGGTGAAGATATGGGAAATTCTATTCTGCTGGTAAGGATCCT
 361 a 420
 CTCTTATTGACATTGGCACTTCTATAACCTTTAAAGATAAGTCGACCATCTTAGGA
 E N N C K N G E D M G N F Y S A G K D P -

 GCTTTCTATAGTCACCATGCAAATGTAGATGCGATGTCGACATTGGAAAACATTAGGA
 421 a 480
 CGAAAGATATCAGTGGTACGTTTACATCTACGGTACACCTGTATAACCTTTGTAATCCT
 A F Y S H A N V D R M W T I W K T L G -

 GGAAAACGCAAGGACATCAACAGCCAGATTATTGAAACACTGAGGTTCTTCTACGAC
 481 a 540
 CCTTTGCGTTCTGTAGTTGTTGGTCTAATAACCTTGTGACTCAAGAAAAAGATGCTG
 G K R K D I N K P D Y L N T B F P F Y D -

 GAAAA
 541 a 545
 CTTT
 E -

FIGURE 5

TGCACITGTGCGTATTGCAACGGTGCTTACAAAATTGGTGGCAAGAGTTACAAGTCCATT
 1 -----+-----+-----+-----+-----+-----+-----+-----+ 60
 ACGTGACACGCATAACGTTGCCACGAATGTTAACCCACGGTTCTCAATGTTCAAGGTAA
 c H C A Y C N G A Y K I G G K E L Q V H F -

 TCTCGTGGCTTTTTTCCCTTTCATAGATGGTACTTGTACTTCTATGAAAGAATCTGG
 61 -----+-----+-----+-----+-----+-----+-----+-----+ 120
 AGAGCACOGAAAAAGGGAAAAGTATCTACCATGAACTGAAGATACTTCTTAGAACCC
 c S W L P F P F H R W Y L Y F Y E R I L G -

 GCTCTTTAATTATGATCTACTTTGGTTGCCATAITGAACTGGGACCATCCAAGG
 121 -----+-----+-----+-----+-----+-----+-----+-----+ 180
 CGAGAAATTAAATTACTAGGAATGAAACCCAAACGGTATAACCTGACCCCTGGTAAGGTTCC
 c S L I N D P T F G L P Y W N W D H P K G -

 GCATGCGTATACTCTCCATGTTGATGATGAGGGCTTCCCTTACGACOGAAAAAGTA
 181 -----+-----+-----+-----+-----+-----+-----+-----+ 240
 CGTACGCATATGGAGGGTACAAAGCTACCACTCCAGAAAGGGAAATGCTGCTTTTGAT
 c M R I P P M F D R E G S S L Y D E K R N -

 ACCAAAGTCACCGTAATGGAACCATAATTGATCTGGTCATTGGTCAGAAAGTCCAA
 241 -----+-----+-----+-----+-----+-----+-----+-----+ 300
 TGGTTTCAGTGGCATTACCTGGTATTAACTAGAACCAAGTAAAGCCAGTTCTCAGGTT
 c Q S H R N G T I I D L G H F G Q E V Q T -

 CAACTCAACTGCAGCAGATGACTAATAACTAACTATAATGATGCTGAAATGATAACTA
 301 -----+-----+-----+-----+-----+-----+-----+-----+ 360
 GTTGAGTTGACGCTGCTACTGATTATTGAAATTGATATTACATAGCACTTACTATTGAT
 c T Q L Q Q M T N N L T I M Y R Q M I T N -

 ATGCTCCCTGGCCCTGCTCTTGGTCAGCCTTACCCCTAGGAACGTGATCCAGTC
 361 -----+-----+-----+-----+-----+-----+-----+-----+ 420
 TACGAGGAACGGGAACGACAGAAACCAAGTCGGAAATGGGAGATCCTTCACTAGGGTCAG
 c A P C P L L F F G Q P Y P L G T D P S P -

 CAGGGATGGGCACTATTGAAACATCCCTCATACTCCTGTCACATTGGGTGGTAGTA
 421 -----+-----+-----+-----+-----+-----+-----+-----+ 480
 GTCCCTACCCGTGATAACTTTCTAGGGAGTATGAGGACAGGTGAAACCCAAACCATCAT
 c G M G T I E N I P H T P V H I W V G S R -

 GGCTTGATGAGAATAATACGAAACACGGTGAGGATATGGTAATTTCCTACTGGCOGGTT
 481 -----+-----+-----+-----+-----+-----+-----+-----+ 540
 CGGAACACTCTTATATGCTTGTGCCACTCTATACCCATTAAAAATGAGCCGGCCAA
 c L D E N N T K H G E D M G N F Y S A G L -

 TAGACCOGCTTTCTATTCCCATCACGCCAATGTGGACCGGATGTGGTCGGAGTGGAAAG
 541 -----+-----+-----+-----+-----+-----+-----+-----+ 600
 ATCTGGGCGAAAAGATAAGGGTAGTGGGTTACACCTGGCTACACCAGGCTCACCTTC
 c D P L P Y S H H A N V D R M W S E W K A -

 CCTTAAAGGGAAAAGAAGGGATCTCACCAACAAAGATTGGTGAACCTCGAGTTCTTT
 601 -----+-----+-----+-----+-----+-----+-----+-----+ 660
 GGAATCCTCCCTTTCTCCCTAGAGTGGCTTCTAACCAACTGAGGCTCAAGAAA
 c L G G K R R D L T H K D W L N S E F F F -

 TCTACGATGAAAA
 661 -----+-----+-----+-----+-----+-----+-----+-----+ 673
 AGATGCTACTTTT
 c Y D E -

FIGURE 6

TGCAATTGCGTATTGCAACGATGCTTACACAATGGGTGACCAAAANGTTACAGTTCAACC
 1 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 60
 ACGTAACACGCCATAACGTTGCTACGAATGTTACCCACTGGTTCAATGTTCAAGTGG
 c H C A Y C N D A Y T M G D Q K L Q V H Q -

 AATGGTGGCTTTCTTCCCGTTCTAGATGGTACTTGTACTTCTACGAGAGAATCTTGG
 61 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 120
 TTAGCACCGAAAAGAAGGGCAAACTATCTACCATGAACATGAAGATGCTCTCTTAAAC
 c S W L F F P P H R W Y L Y P Y B R I L G -

 GCTCCCTCATCGATGATCCAACCTTGTCTGCCATATTGAACTGGGACCATCCAAAGCG
 121 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 180
 CGAGGGAGTAGCTACTAGGTGAAAACGAGACGGTATAACCTTGACCCCTGGTAGGTTGGC
 c S L I D D P T F A L P Y W N W D H P S G -

 GCATGGTTTGCCTGCTATGTCGATGTCGAAGGTTCTCCCTCTACGATGCAAGACGTA
 181 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 240
 CGTACGCAAACGGACGATAACAGCTACAGCTTCCAGAAAGGGAGATGCTACGTTCTGCAT
 c M R L P A M F D V E G S S L Y D A R R N -

 ATCCACATGTCGTAATGGAACCATAATCGATCTGGTTTTTGGTGTATGAAAGTCAAA
 241 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 300
 TAGGTGTACAGGCATTACCTGGTATTAGCTAGAACCAAAAAGCCACTACTTCAGTTT
 c P H V R N G T I I D L G F F G D E V K T -

 CTAATGAAATAACAGATGATAACTAACAACTTAATTCTAAATGTATCGTCAAATGATAACTA
 301 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 360
 GATTACTTTATGTCACTATTGATTGGTGAATTAGATTACATAGCAGTTACTATTGAT
 c N K I Q N I T N N L I L M Y R Q M I T N -

 ATGCTCCATGCCCGCTGGTTCTGGAGAGCTTACAGATTCGGATCTAAACCCAAATC
 361 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 420
 TACGAGGTACGGGCGACAAACAAAGAAGCCTCTGGAAATGCTAAAGCTAGATTGGGTTAG
 c A P C P L L F F G E P Y R F G S K P N P -

 CGGGGCAGGGAAACCATGGAAAACATTCTCATACTCOGGTCACTTGGACTGGTACTG
 421 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 480
 GCCCCGTCCTTGGTAACCTTGTAAAGGAGTATGAGGCCAGTGTAAACCTGACCATGAC
 c G Q G T I E N I P H T P V H I W T G T V -

 TGCCTGTAACGGATTGGGTAATTGTGTCGCCATCATCGGTGAGGATATGGTAATTCT
 481 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 540
 ACGCCACATGCCAAACCCATTAAACACACGGTAGTATGCCACTCCATTACCCATTAAAGA
 c R C T D L G N C V P S Y G E D M G N F Y -

 ACTCAGCTGGTTAGACCCAGTTTACAGCCACCAAGCCAAATGCGACCCATGTGG
 541 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 600
 TGAGTCGACCAAAATCTGGGTCAAAAAAATGTCGGTGGTGGTTACACCTGGGTAACACCT
 c S A G L D P V F Y S H H A N V D R M W N -

 ATGAAATGAAAGCACTAGGAGGGAAAAGAAGGGATCTCACAGACAATGATTGGTTAAACT
 601 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 660
 TACTTACCTTCTGGTAACTCCCTCCCTTCTCCCTAGACTGTCTGTTACTAACCAATTGAA
 c E W K A L G G K R R D L T D N D W L N S -

 CGGAGTTCTTTCTACGGACGAAA
 661 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 685
 GCCTCAAGAAAAAGATGCTGCTTT
 c S F F F Y D S -

FIGURE 7

10/27

TGCATTGTGCGTACTGGCACGGCGTATGACCAAAATGGCTTCCCCGATCTCGAGATCC
1 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 60
ACGTAACACGCATGACGCTGCCGCATACTGGTTAGCGAACGGCTAGAGCTCTAGG
c H C A Y C D G A Y D Q I G F P D L E I Q -

AGATCCACAACTCGTGGCTCTCTTCTGGCACCGGTTCTACCTCTACCTCAACGAGC
61 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 120
TCTAGGTGAGCACCGAGAAGAAGGAACCGTGGCCAAGATGGAGATGAAGTTGCTCG
c I H N S W L F P P W H R F Y L Y F N E R -

GCATACTGGGAAACTTATCGCGACGACACGTTGGCTGCTTTCTGGAACTGGACG
121 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 180
CGTATGAGCCCTTGAATAGCGCTGCTGTGCAAGGCGACGGAAAGACCTTGACCCCTGC
c I L G K L I G D D T F A L P F W N W D A -

CGCCGGGGGGCATGCAGTTCGGCTATCTACACGGACCCCTCATCTCGCTATATGACA
181 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 240
GOGGCCCCCCGTAAGCTCAAGGGCAGATAGATGTGCTGGAAAGTAGGGAGCGATATACTGT
c P G G M Q F P S I Y T D P S S S L Y D K -

AGCTGCGTGATGCGAACCGACCGCGCOGACTTTGATGACCTCGACTACAATGGCACCG
241 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 300
TOGACGCCTAAGCTTGTGGCTGGCGGGCTGAAACTAATGGAGCTGATGTTACCGTGGC
c L R D A K H Q P P T L I D L D Y N G T D -

ATCCTACCTCTCCCTGAAGAACAGATTAAACCAACCTCGCCGTATGTACCGACAGG
301 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 360
TAGGATGGAAGGGGACTCTTGCTTAATGGGTTGGAGGGCAGTACATGGCTGTCC
c P T F S P E Q I N H H N L A V M Y R Q V -

TGATATCCAGTGGAAAGACACCCAGAGCTGTTTATGGCTCGCGTACCGCGCGGGTGACC
361 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 420
ACTATAGGTACCTCTGTGGCTCGACAAATACCGAGTCGATGGCGGGCCACTGG
c I S S G K T P E L F M G S A Y R A G D Q -

AGCCTGACCCCCGGCAGGTTCTGTAGAGCAGAACGGCCCGGTGCATGTGTGGA
421 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 480
TOGGACTGGCGCGCGTCTAACAGACATCTCGCTTGGCGTGCACGGCCACGTACACACCT
c P D P G A G S V E Q K P H G P V H V W T -

CAGGTGATGCCAACAGCCAAATCGCGAACATGGCAOGCTCTACTCGGCGCGTGGG
481 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 540
GTCCACTAGCGTGGTGGCGGTAGCGCTCTGTACCCGTGGAGATGAGCGCGCGCACCC
c G D R N Q P N R E D M G T L Y S A A W D -

ACCCCGTTTTTGCACACCAACGGCAAATCGACCGCATGTTGTTACGTGTGGAGGAACC
541 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 600
TGGGGCAAAAAAAGCGTGTGGTGGCGTGTAGCTGGCGTACACCATGCACACCTCCCTGG
c P V F F A H H G N I D R M W Y V N R N L -

TTGGCGGCAAGCACCGCAACTTACCGAACCCGACTGGCTCAACCGCTCCCTCTGTCT
601 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 660
AACCGCCGTTGGCGTGAAGTGGCTGGGGCTGACCGAGTTGGCGAGGAAGGACAGA
c G G K H R N F T D P D W L N A S F L F Y -

ACGACGAAAA
661 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ 670
TGCTGCCTTT
c D E -

FIGURE 8

TTGCGCTTTGGAATTGGGACGGCGCGGGGGCATGCAGATCCCGCCATCTACGCGAC
 1 -----+-----+-----+-----+-----+-----+-----+ 60
 AACGGCAAACCTTAACCCCTGGCGGGCCCCCGTACGCTCTAGGGCGGTAGATGGGCTG
 a L P F W N W D A P G G M Q I P A I Y A D -

 GCTTCGTCGGCGCTACGACAAGCTCGCAATGCGAAGCACCAGCGCGACTTGGTC
 61 -----+-----+-----+-----+-----+-----+-----+ 120
 CGAAGCAGGGCGAGATGCTGTTGACGCGTTACGCTCTGGTGGCGGTGAAACCG
 a A S S P L Y D K L R N A K H Q P P T L V -

 GACCTCGACTACAAOGGCACCGACCGAACCTCACCCCTGAGCAGCAGATGCCAAC
 121 -----+-----+-----+-----+-----+-----+-----+ 180
 CTGGAGCTGATGTTGCGCTGGCTGGACTCGGACTGCTAGGGTGTAGGGTGTG
 a D L D Y N G T D P T F T P E Q Q I A H N -

 CTCACCATCATGTACCGACAGGTGATATCCGGGGGAGAGCGCGGAGTTGTTATGGC
 181 -----+-----+-----+-----+-----+-----+-----+ 240
 GAGTGGTAGTACATGGCTGTCACTATAGGCCGCCCTCTGGCGCTCACAAATACCG
 a L T I M Y R Q V I S G G K T P E L F M G -

 GGGCGTACCGCGCGGGCGACCGCCAGACCCGGCGCAGGCACTCTAGAGCTCGCG
 241 -----+-----+-----+-----+-----+-----+-----+ 300
 CGCGCATGGCGCGCCCGCTGGCGGCTGGGCCCCGGTGGAGATCTCGAGCACGGC
 a A A Y R A G D A P D P G A G T L E L V D -

 CACAAACGGATGCATTGACGGACGGGACCCAAACCAACCCAAACGAGGAAGACATGGC
 301 -----+-----+-----+-----+-----+-----+-----+ 360
 GPGTTGTGCTACGTAACACCTGGCGCTGGGTTGGTGGCTGCTGCTGTGACCG
 a H N T M H L W T G D P N Q P N D E D M G -

 ACGTTCTACGGCGGGGGGGACCCCATCTCTCGCCCAACCGCAACGTCGACCGC
 361 -----+-----+-----+-----+-----+-----+-----+ 420
 TGCAAGATGCGCCGCGCGCCCTGGGTAGAAGAAGCGGGTGGTGCCTGAGCTGGCG
 a T P Y A A A R D P I F P A H H G N V D R -

 ATGTGGTACGTGCGGGAAACTCGGGGGACCGCACCGCGATTCACCGACCCGACTGG
 421 -----+-----+-----+-----+-----+-----+-----+ 480
 TACACCATGACACCGCTTGGCGCCCTGGGTGGCTGGCTAAAGTGGCTGGGCTGACC
 a M W Y V W R K L G G T H R D F T D P D W -

 CTCACCGCTCTCTCTACGAGAGAACGGCACGCGAGCTCGTCCGCGTCAAAGTAAG
 481 -----+-----+-----+-----+-----+-----+-----+ 540
 GAGTTGCGCAGGAAGGAGAAGATGCTGCTCTGGCGTGGAGCAGGGCGAGTTCAATT
 a L N A S F L P Y D E N A Q L V R V K V K -

 GACTGCTTGAGCGCCGACCGCGTGGTACACGACCGAGTCGACATCCCGTGGATC
 541 -----+-----+-----+-----+-----+-----+-----+ 600
 CTGACCGAACTCGGGCTGCGCGACGCCATGCTGCTGGCTGAGCTGTAGGGCACCTAG
 a D C L S A D A L R Y T Y Q D V D I P N I -

 AGTGCGAAGCGACGCCGAAGAAAACACCGGGGGCCCTCGCCCTTCCACGACAGAGGCT
 601 -----+-----+-----+-----+-----+-----+-----+ 660
 TCACGCTCGGCTGGCTTCTTGTGGCCCCCGCGACCCGGAGGTGCTGTCCTCGA
 a S A K P T P K K T P G G A A P S T T E A -

 ATATTTCCGGTGGTGGATAAGCGGTGAGCTCTACGGTGGCGAGGCCGAAGACGGGG
 661 -----+-----+-----+-----+-----+-----+-----+ 720
 TATAAAGCCACCCAGGACCTATTGGCCACTCGAGATGCCACCGCTCGGCTCTGCCCC
 a I F P V V L D K P V S S T V A R P K T G -

FIGURE 9-1

12/27

MAP OF: pin2join check: 3759 from: 1 to: 1319 June 19, 1997

FIGURE 9-2

1 CGGTATGATAAGCTTGTATCCAGTGCCTGGTTAGGTGTATTCACTATGCCACCCCTTC
 1 60
 b GCCATAGCTATTCGAACCTAGGTCAACGGACAAATCCACATAAGTGTATACGGTGGGAGAG
 G I D K L D P V P G L G V F T M A T L S -
 61 TAAACTAGCTTCCCAACCAATAACACCTCCACTCTCCCGCTCCCTCTTGTAGCTGCTCC
 61 120
 b ATTTGATCGAAGGGTGGTTATTGTGGAGGTGAGAGGGGGCAGGGAGGAAACGTACGAGG
 K L A S Q P I T P P L S P L P P L H A P -
 121 TTCTCTCACAAAAGCTTACACCCACCTCTCCCTCCCTCCCTGTAGGGTCCCACACCC
 121 180
 b AAGAGAGTGGTTTCGAAGTGGTGGAGGAGAGGGGACATCCCAGGGTTGGTGGG
 S L T K S F T T T F L S P V G V P N H P -
 181 CGTCATAAGATCTCATGCAATCTAAGGAGCAACANGAGAATGCCACAGCTGGGGC
 181 240
 b GCAGTATTCTAGAGTAGTTAGTTCTCTGGCTTCTTACGGCTGTCGGACACCCCG
 V I R S H A N L R S N K R M P T S L R A -
 241 CGCATGCCCGCGCGACCTACTCTGGGCCCTCGGCGGGCTTACGGTGCCACCACTGG
 241 300
 b GCGTAGCGGGGGCGCTGGATGAGGACCCGGAGCGCCCGAACATGCCACGGTGGTGAC
 A S P A A T Y S W A L G G L Y G A T T G -
 301 GCTCGGCCTCAACCGTCGAGCGGCCGCGCGCCCTATCCCTGGCTCCCGACCTCTCACTTG
 301 360
 b CGAGCCGGACTTGCACCTCCCGCGGGATAGGACCGAACGGCTGGAGACTTGAC
 L G L N R R A A A A P I L A P D L S T C -
 361 TGGGCGCCTGCGACCTCCCTGCGCTCCGCGACCGACAGTTTGCTGCCCGCATACCA
 361 420
 b ACCCGGCGGACGGCTGGAGGGAGGGGGCTGGCTGTCAAACGAACGGCGGTATGGT
 G P P A D L P A S A R P T V C C P P Y Q -
 421 ATCCACCATCATCGACTTCAAGCTCCCCCGCGATCTGCTCGCTTGGGTGGCTGC
 421 480
 b TAGGTGGTAGTAGCTGAAGTTGGAGGGGGCGCTAGACGAGGCGAAGGCGAGGCCACG
 S T I I D P K L P P R S A P L R V R P A -
 481 GGGCCACTTGGTTGACGCCACTACCTGGCCAAGTATAAGAAGGCGTGGAGCTCATGAG
 481 540
 b CGGGGTGAACCAACTCGCGCTGATGGACCGGTTCAATTCTTCCGCCAGCTGGAGTACTC
 A H L V D A D Y L A K Y K K A V E L M R -
 541 GGGCCCTGCCGGCGACGACCGACCGCGCAACTTGTACAGCAACGGAAAGTGCACGTGGCTA
 541 600
 b CGGGGACGGCGGGCTGCTGGGCCGTTGAAGCATGTCGGTTCGCTTCACTGACACGGCAT
 A L P A D D P R N F V Q Q A K V H C A Y -
 601 TTGCGACGGCGGGTATGACCAAATCGCTTCCCGATCTCGAGATCCAGATCCACAACTC
 601 660
 b AACGCTGCCGCGCATACTGGTTAGCGGAAGGGCTAGAGCTCTAGGTCTAGGTGGAG
 C D G A Y D Q I G F P D L E I Q X H N S -
 661 GTGGCTCTTCTTCTTGGCACCGGCTACCTCTACTCCACGAGCGCATACTCGGGAA
 661 720
 b CACCGAGAAGAAAGGAACCGTGGCCAAGATGGAGATGAGGTGCTCGCGTATGAGCCCTT
 W L P F P W H R F Y L Y S N B R I L G K -

FIGURE 10-1

14/27

FIGURE 10-2

15/27

1501 *GGCCAGGGAGCTGGGAGGAGAAGGAAAGAGGAGGGGTTGGGGTGGGGAT* 1560
 b *CGCGTCCCTCTCACCCCTCTCTCTCTCTCCACACACACACCTCCCTTA*
 A R R S G K E K R E E E V L V V E G I
 1561 *CGAGTTGGAGAAGGACGTGTTGAGTTGATGATATAAACTCGCCGGAGCACGA* 1620
 b *GCTCAACCTCTCCCTGCACAAAGCACTCAAACTACACATATAATTGAGCGGCTCGTGC*
 E L E K D V F V K F D V Y I N S P E H E
 1621 *AGGGGTGGGCCCCGAGCGAGTGACTTCGAGGGAGCTTOGTCACGTGOCACACAAAGCA* 1680
 b *TCCCCACCCCGGCTCCGCTCACTCAAGCGTCCCTCGAAGCAGGTGACGGTGTGTTG*
 G V G P E A S E P A G S F V H V P H K H
 1681 *CAAGAAGCCGAAGAAGGGAGGAGATGGCCAGGATGAACACAAAGCTTAAGCTCGGGAT* 1740
 b *GTCTCTCGCTCTTCCCTTCCCTACCGTCTACTTGTCTCGAATTCAGGCTTA*
 K K A K K G K E M A R M N T R L K L G I
 1741 *AACGGACCTGCTGAGGACATGGCGCTGAGGACGAGAGAGCGTGTCACTACGGCTCGT* 1800
 b *TTGCTTGGAGGAGCTCTGTAGCCCGACTCTGCTCTCGACAGGAGTGTGAGCA*
 T D L L E D I G A E D D E S V L I T L V
 1801 *GCCAGGAGCGGCAAGGGAAATGGTGAAGGTTGGAGGGCTAAGGATTGATTCTCGAACATG* 1860
 b *CGGGTCTCGCGCTTCCCTTACCACTTCCAACCTCCCGATTCCTAACAAAGGTTAC*
 P R S G K G M V K V G G L R I D F S K
 1861 *ATGAGCATATTGTGAAGAGAAATTTCATTTACCGCCCTATAGAAATCGAAAAATTGGCT* 1920
 b *TACTGTTAAACACTCTCTTTAACGTAATGGCGGGATATCTTAGCTTTAACGCA*
 ** A Y C E E K I C I Y R P I E S K N C V*
 1921 *ATATGTCCATTATTGTCTTCTTATTCAGCGTATTCAAGAATAAGAGTTGCGTGCA* 1980
 b *TATACAGGGTAATAACAAAAAAATAAGAAGTTGCAAAAGTCTTATTCTCAACGCACT*
 Y V P L L F F L P P K R I Q N K S C V H
 1981 *TGCACGCATGCAGCCATGTTGTTAGTCGATATGGGGTATGTTGGATCAGGGATAAA* 2040
 b *ACGTGCGTACGTGGTACAAACACATCAGCTATACACCCCATACAAACCTAGTCCCTATT*
 A R M O P C C C S R Y V G Y V W I R D N
 2041 *TGATGTGAACTTGAATAATTATTACACTCTGAGAATAAAATTAGAGAGTTATTATGCA* 2100
 b *ACTACACTTGAACTTAATTAAATGAGACTCTTAAATCTCAAAATAATACGT*
 *D V N F E L I I T L * E * I R E F I M Q*
 2101 *AGTTGCTTGGTGTAATAGATATTCAACATGTTCTTACATCTTTTTGGAGAAAA* 2160
 b *TCAACGAAACACATTAACTATAAGTGTAAACAAGGATAATGAGAAAAACCTCTTT*
 V A W C N R Y S T L F P I H L F L E E K
AAAAAAAAAAAAAAATCGAT
 2161 *TTTTTTTTTTTTTTAGCTA* 2181
 b *K X K K K S*

FIGURE 10-3

16/27

FIGURE 11-1

17/27

841 CTACACCGAAGAACACTGCATCGACAGCGAGATCATACGGGAGAACCTCTGCTTCATA - 900
 GATGTGGCTTTCTGACGTAGGCTGTCGCTCTACTATGCCCTCTGGAGACGAAGTATGT
 Y T E N T A S D S E I I R E N L C P I Q -
 GAAGACCTTCAGCACAGCCTGTCGCTGGCGGAAGTGTTCATGGGGATCCCCGCGCGC -
 901 CTTCTGCAAGTTCGCTGCGACAGCGACCCCTTGACAAGTACCCCTAGGGCACCGCGC - 960
 K T F K H S L S L A E L F M G D P V R A -
 GGGGGAGAAGGGAGATCCAGGAGGCTAATGGCGAGATGGAAGTCAACACAAATGGGGCGA -
 961 CCCCCCTCTCTCTAGGTCTCTCCGATTACCCGCTACCTTCAGTAGGTGTTAGCCCGGT - 1020
 G E K E I Q E A N G Q N E V I H N A A H -
 CATGTGGGTGGAGAGCCGGACATACAAGGAAACATGGGGACTTCACACCCGCGC -
 1021 GTACACCCAGCCCTCTGGCTGCGCTATGTTCTTTTGTAACCCCTGAAGAGGGGGCGG - 1080
 M W V G E P D G Y K E N M G D P S T A A -
 CCGCGATTCTGTTTCTCTGCCACCATTCAAATGTCGACCGCATGTTGGACATCTACCG -
 1081 GGGGCTTAAGACAAAAGAAGACGGTGGTAAGGTTACACGCTGGCGTACACCCGTAGATGGC - 1140
 R D S V F F C H H S N V D R M W D I Y R -
 CAACCTCCGGCGAACCCGGTCGAGTTGAGAACACAACGACTGGTTGGACAGCACCTCTCT - 1200
 GTTGGAGGCAGCGCTGGCGAGCTCAAGCTCTGTTGCTGACCAACTGTCGTTGGAAAGGA -
 N L R G N R V E P E D N D W L D S T F L -
 CTTCCACGGAGAACGAAACAGCTGTCAAAGTCAGATGAGGACTGCTCAACCCGAC -
 1201 GAAGGTGCTGCTCTTCGCTGAGCAGTTCTACTCTGCTGACGGACTTGGCTG - 1260
 F H D E N E Q L V K V K M S D C L N P T -
 CAAGCTTCGGTACACGTTGGAGCAAGTCCCCCTCCCATGGCTGGGAAAGAACATGGCA - 1320
 CTTGGAAGCCATGTCGAAGCTCTTCAGGGGAGGGTACCGACCCGTTTAACTAACGGT -
 K L R Y T F E Q V P L P W L G K I N C Q -
 GAAGACGGCAGAGACGAAGTCCAAGGCCACGACGGAGCTGTCGCTGACGGCGGTGAAACGA - 1380
 CTTCTGGCTCTCTGCTTCAGGTTGGGCTGCTGACAGCGACTGGCGACTTGT -
 K T A E T K S K A T T E L S L T R V N E -
 ATTCGGGACCGGCCACGGCAACTCGACGGAGCAACCCGCTGGGGTGAATCTGGCAAG -
 1381 TAAGCCCTGCTGCCGGTCCCTGAGCTGCGCTGTTGGCGACCCCCACTAGCACCGTC - 1440
 F G T T A Q A L D A S N P L R V I V A R -
 GCGGAAGAAGAACCGAACAGAACAGGAGAACAGAGAACAGAGAGGGTGGGGTGAATCAAA -
 1441 CGGCTCTCTCTGGCTCTCTCTCTGCTCTCCACCCCCACTAACGGTCTAGTT - 1500
 P K K N R K K E K Q E K V G V I Q I K -
 GGATATTAAGGTGACCAACCAACGAGACAGCTGCTTCGACCTCTATGTCGCGTCTTA - 1560
 CCTATAATTCCACTGGCTGCTCTGTCGACGGAAACCTGCAGATAACAGCGCCAAAGGAAT -
 D I N V T T N E T A E F D V Y V A V P Y -
 CGGTGACCTGGCGACCCGACTACGGCGAGTTGGGGCAGCTAAGTGAGGCTGGCGCA - 1520
 CCCACTGGAGCGCCGCTGGGCTGATGCCGCTCAAGGCCCTGCTGAGCACTCGACCCGGT -
 G D L A G P D Y G E F A C G S Y V R L A H -
 TAGGATGAGGGAGGGACGGGACCCGAAAGCAGGCCCCAAGAAGAACGGAAAACCTCAA -
 1521 ATCCTACTTCCCTTGGCTGCCCTGGCTTCTGTCCTGGGGGTTCTCTCCCTTTGAGTC - 1580
 S M K C S C G T E K Q S P K K K G R L A H -

FIGURE 11-2

1681 GCTGGGTATTACGCCGTGCTCGAGGACATCGATGCTGAGGACGCCGACAACTTGGTGGT 1740
 CGACCCATAATGCCGGGACGAGCTCTGTAGCTACGACTCTGGGCTGTCACCAACCCACCA
 L G I T P L L E D I D A E D A D K L V V -
 1741 CACCTGGTTCTCCGCACTGGGAGCGTCACCGTGGGGGGAGTTCCATCAATCTCTGCA 1800
 GTGGGACCAAGAGGGTGTACCCCTCGCAGTGGCACCCCCCTAAAGGTAGTTAGAGGACGT
 T L V L R T G S V T V G G V S I N L L Q -
 1801 GACAGATTCTACCGCCGCCATCTAAATGATGGCTCGGATCACAGCTTCCTCCCGCTAA 1860
 CTGTTAAGATGGGGGGTAGATTACTACCGGAGCCTAGTGTGAAGAGGGCGAATT
 T D S T A A I -
 1861 GTGGGAGTGATCGATTACTGGGCTGCTTCTTCCCTGTCGTCTTGCTATCTCTT 1920
 CAACCTCACTAGCTAATGACCAACGACCAAGAAGGAGGGACACCAAGAACGATAGAACAA
 1921 GATCTGGAACGATCTCAATAATTAGGCATGACAGTAGTCGCGCCGATCCCATATG 1980
 - CTAGACCTTGCTAGGAAGTTATTAACTCCCTACTGTCATCACAGCGGGCTAGGGTATAAC
 1981 TACGTGTTGGTCTCAACAGCTGTACATGTGACGTTATGGTGTGACTATATTTTATTGC 2040
 ATGCCACAAACAGAGTTGTCGACATGTACACTGCAATACCAACTGATATATAAAATAACG
 2041 GGTCACTCTTGTCTTCTTAAAAAAAAAAAAAAA 2078
 CCAGTAGGAACAAAGAAGAATTTTTTTTTTTTT

FIGURE 11-3

1 AATGTGGATCGGATGTGGACCCGTGGAAGAACTGCAACGGCGACAAAGCGGGAGTTGGTC
 60 TTACACCTAGCCTACACCTGCCACACCTTCTTCGACGTGCCGCTGTCTGGCTCAAGCAG
 N V D R M W T V W K L H G D K P E F V -
 GACCAAGGAGTGGCTCGAGTCAGAATTACCTTCTACGACCGAGAATGTGGCTGGCGAGG
 61 CTGGTCTCTACCGAGCTCAGACTTAAGTGAAGATGCTCTTACACGGCGACGGCTCC
 D Q E W L E S E F T F Y D E N V R L R R -
 ATCAAGGTCCCCGACCTGTTGAACATAGACAAACTCAGGTACCGCTACGAAGACATCGAC
 121 TAGTTCCACGGCGTGCACAACTTGTATCTGTTTACTCCATGGGATGCTCTAGCTG
 I K V R D V L N I D X L R Y R Y E D I D -
 ATGCCATGGCTCCTCGACCTCCAAAGCTTCTACCTTACAGATGGGGGGGACATA
 181 TACGGTACCGACCGACGCTGCAGGGTTCCGAAGGCAAGTGGGATTCAGCGCGGCTGTAT
 M P W L A A R P K P S V H P K I A R D I -
 TTGAAGAAGCCTAATGGGAAGGGCTACTGAGAAATGCCGGGGAAGGGATGTTACAA
 241 AACTTCTTCGCAATTACCGCTTCCGCATGACTCTTACGGGGCGTTTGCCTAGCAAGTGGT
 L K K R N G E G V L R M P G E T D R S Q -
 CTCTCGAAGATGGTAGCTGGACACTGGACAAGAGCATCACCGTAGGGGTTGACAGGCCA
 301 GAGAGGCTTCTACCATCGACCTGTGACCTGTTCTGTTACTGGCACTCCAACTCTCCGGT
 L S E D G S W T L D K S I T V R V D R P -
 AGGATCAACAGGACAGGGCAAGAAAAAGAGGAAGAAGAGGAGATCTTATGGTCTACGGA
 361 TCCTAGTTCTCTGTCCTCTCTCTCTCTCTCTCTAGAATAACCAAGATGCT
 R I N R T G Q E K E E E E I L L V Y G -
 ATCGATACTAAAGAGAACCGAGATTCGCAATTGATGTGTTCATCACCGCGTCACGAA
 421 TAGCTATGATTCCTTCGCTTAACCAAGTTAAGCTACACAAGTAGTTGCAAGCTGCTT
 I D T K R S R F V K P D V F I N V V D E -
 ACCCTGCTGAACCCAAAGTCGAGGGACTTCCAGGGACCTTCGTCATCACCGCGTCACGAA
 481 TGGCACGACTTGGGTTTCAGCTCCCTCAAGCTCCCTGGAGCACTTAGAGCTGGTGCAG
 T V L N P K S R E F A G T F V N L H H V -
 TCGAGGACGAAAAGCCATGAGGAATGGGGCTGGGTTGAGAAGATGAAAAGCCACCTTAAAG
 541 AGCTCCCTGGTACTCTACCCGGCAACCAAGCTCTACTTTCGGTGGAAATTC
 S R T K S H E D G C V G S K M K S H L K -
 CTCGGTATATCGGAACCTTGGAGACTCGAGGCAGACGAAGATGATTCGATCTGGGTG
 601 GAGCCATATGGCTTGAACCTTCTGGAGCTCCCTGCTCTACTAAACGAGACCCAC
 L G I S E L L E D L E A D E D D C I W V -
 ACACCTGGTGGCAAGAGGGGGACTGGGCTCAACACCAACCGTAGACGGCGTCCGGATCGAC
 651 TGTGACCAACGGTTCTCCGCGTGCCTCCAGTTGTGTCATCTGGCGAGGGCTACGCTG
 T L V P R G C T G V N T T V D G V R I D -
 TACATGAAGTAGTGAACCGGCACGCCCTCCCTCCCCATCAGAAGTGGTATAATAT
 721 ATCTACTTCATCACTTGGCGTGCAGGGAGGGAGGGTAGCTTACCCATATTATA
 Y H S -
 780

FIGURE 12-1

20/27

781 TTATATGGATCGAGGCTCGTGGTATCTTTGATAAGAGTAAGTCCATAAATTTAGAAG 840
AATATAACCTACCTCCAGCACCATAAGAAAACATATTCTCATTCAAGGTATTTAAATCTTC

841 AAGAAATCATGTTCTTATTTATTTAAATCAATGTTGATTGTCAAAAAAAAAAAAAAA
TTCTTACTACAAGAAATAAAATATAATTAGTTACACTAAACAGGTTTTTTTTTTTTTT

FIGURE 12-2

1 TGCACCTCTCGTATTGCCACGGCGCTATGACCAATCGGCTCCCCGATCTGAGATCC 60
 1 ACGTGACACCGATAACGCTGCCGCCATACTGGTTAGCCGAAGGGCTAGAGCTCTAGG
 C H C A Y C D G A Y D Q I G F P D L E I Q -
 61 AGATCCACAACTCGTGGCTTCTTCTTCTGGCACCGGTTCTACCTCTACTCCACGAGC 120
 C TCTAGGTGTTGAGCACCGAGAAGAAAGGACCGTGGCAAGATGGAGATGAGGTTGCTCG
 C I H N S W L F F P W H R F Y L Y S N E R -
 121 GCATACCTCGGAAACTTATCGGCCACGACACGTTGGCTGCTCTTCTGAAACTGGGACG 180
 C CGTATGAGGCCCTTGAAATAGCCGCTGCTGCAAGGCCGAGGAAAGACCTTGACCCCTGC
 C I L G K L I G D D T F A L P F W N W D A -
 181 CGCCGGGGGGCATGCAGTTCCGCTATCTACACGGACCCCTCATCTCGCTATATGACA 240
 C GGGGCCCCCGTACGTCAGGCAGATAAGATGTGCTGGAAAGTAGGAGCGATATACTGT
 C P G G M Q F P S I Y T D P S S S L Y D K -
 241 AGCTGCGTGATGCCGANGCACCAAGCCGACTTTGATTGACCTCGACTACAAATGGCACCG 300
 C TCGACGCACCTACGCTTCGGTCGGCGCTGAAACTAACTGGAGCTGATGTTACCGTGGC
 C L R D A K R Q P P T L I D L D Y N G T D -
 301 ATCCTACCTTCTCCCTGAAGAACAGATTAAACCACAACTCGCCGTATGTACCGACAGG 360
 C TAGGATGGAAGAGGGACTCTTGCTAACTGGTGTGGAGCGGAGTACATGGCTGTC
 C P T F S P E E Q I N H N L A V M Y R Q V -
 361 TGATATCCAGTGGAAAGACACCAAGAGCTGTTATGGGCTCAGCGTACCGGCCGGTGACC 420
 C -ACTATAGGTCACTTCTGTGGTCGACAAATACCCGAGTCGCGATGGCGCCACTGG
 C I S S G K T P E L F M G S A Y R A G D Q -
 421 AGCCTGACCCCGCGCAGGCTCTGTAGAGCAGAACGCCACGGCCGGTGCAATGTGTGG 480
 C TCGGACTGGGGCCCGTCCGAGACATCTCTTCCGGCTGCGGGCCACGTACACACCT
 C P D P G A G S V E Q K P H G R V H V W T -
 481 CAGGTGATCGCAACCAGCCCAATCGCGAAGACATGGCACGCTCTACTCGGGCCGTGG 540
 C GTCCACTAGCTTGGTCGGTTAGCGCTTCTGTACCCGTGCGAGATGAGCCGCCACCC
 C G D R N Q P N R E D H G T L Y S A A W D -
 541 ACCCGTCTTCTCGCACACCACGGCACATCGACCGCATGTGGTACGTGTGGAGGAACC 600
 C TGGGGCAGAAGAACCGTGTGGTGGCTGAGCTGGCTACACCATGCAACACCTCTGG
 C P V F F A H H G N I D R M W Y V W R N L -
 601 TGGGGGCAAGCACCGCAACTTCACCGACCCCGACTGGCTAACCGCTCTTCTGTGTCT 660
 C AACCGCGTCTGGCTGAGCTGGCTGGGCTGACCGAGTGGCGAGGAAGGACAAAGA
 C G G K H R N F T D P D W L N A S F L F Y -
 661 ATGATGAGAAATGCCACGCTCGTCCGTGTTAAAGTAAAGACTGCTTAGAGGCCGACGCAA 720
 C TACTACTCTTACCGCTCGAGCAGGCAAACTTCATTTCTGACGAATCTCCGGCTGGCTT
 C D E N A Q L V R V K V K D C L E A D A M -
 721 TGGGGTACACATACCAAGGATGTAGAGATCCCGTGGCTCAAAGCAAAGCCGACGCCAAGA 780
 C ACGCCATGTGATGGTCTTACATCTCTAGGGCACCGAGTTCTGTTTGGCTGGGTTCT
 C R Y T Y Q D V E I P W L K A K P T P K S -

FIGURE 13-1

781 GCGCCCTACAGAAGATAAAAGAGCAAGCTATCGACGCTGAAGGAAACACCAACGGGGACGA 840
 c CGGGGGATGCTCTCTATTTCTCGTTCCATACCTCGGACTTCCGGTTGGTTCCCCCTGCT -
 A L Q R I K S K V S T L K A T P R G T T -
 841 CGACTACCACAGCAGAGACTACATTCCGGTGGTGGATAAGCCGGTGAGTGCAACAG 900
 c GCTGATGGTGTGCTCTGATGTAAGCCACACGACCTATTGCGCACTCACGTTGTC -
 T T T A E T T F P V V L D K P V S A T V -
 901 TGGCTAGACCGAAGGCCAGGGAGCTGGGAAGGAGAAGGAAGAAGACGGAGGAGGTGTTGG 960
 c ACCGATCTGGCTCCGGTCCCTCCACCCCTCCCTCCCTCCCTCCACCAACC -
 A R P K A R R S G K E K E E E E V L V -
 961 TGGTGGAGGGAACTGAGTTGGAGAAGGACGTGTTGAGTTGATGTTGATATAAAGCT 1020
 c ACCACCTCCCTTAGCTCAACCTCTTCCCTGCACAAGCAGCTCAACTACACATATTTGA -
 V E G I E L E K D V F V K P D V Y I N S -
 1021 CGCCGGAGCACCAAGGGTGGGGCCGGACGGAGTGAGTTGGCAGGGAGCTTCGTCCACG 1080
 c GCGGCTCTGCTTCCCCACCCCGGCTCCGCTCACTCAAGCGTCCCTGAGACGGTGC -
 P E R E G V G P E A S E F A G S P V H V -
 1081 TGCCACACAGCACAGAAGGCGAAGAAGGGAGGGAGATGCCAGGATGAAACACAAGGC 1140
 c ACCGCTGTTGGTCTCTCCCGCTCTCCCTCTACCGGTCTACTTGTTGTTCCG -
 P H K H K K A K K G K E M A R M N T R L -
 1141 TTAAGCTCGGATAACGGACCTGCTGGAGACATCGGCGCTGAGGACGACGAGAGCGTC 1200
 c TATTCGAGCCCTATTGCTGGACGACTCTGTAGCCCGGACTCTGCTGCTCTGGCACG -
 K L G I T D L L E D I G A E D D E S V L -
 1201 TCATCACGGCTCGTGCCAGGAGCGGCAAGGAATGGTGAAGGTTGGAGGGCTAAGGATTG 1260
 c AGTAGTGGAGCACGGGTCTCGCCGTTCCCTACCACTTCAACCTCCGATTCCTAAC -
 I T L V P R S G K G M V K V G G L R I D -
 1261 ATTCTCCAAGTGTAGGCAATATGTAAGAGAAATTGGCATTTACCGCCCTATAGAAT 1320
 c TAAAGAGGTTCACTACTCGTATAACACTCTCTTTAACGTAATGGGGGATATCTTA -
 F S K * A Y C E E K I C I Y R P I E S -
 1321 CGAAAAATTGGGTATATGCTCCATTATTGTTTTTATTCTTCAAGCGTATTCAGAATA 1380
 c GCTTTTAACGCTATACAGGTAATAACAAAAAAATAAGAAGTTCGCTACAGCTTAT -
 K N C V Y V P L L F F L F F K R I Q N K -
 1381 AGAGTTGGCTGCTGACGCACTGAGCCATGTTGTTGAGTCGATATGTTGGGGTATGTTT 1440
 c TCTCAACGCACTGACGTGCGTACGTCGGTACACAAACATCAGCTATACACCCCATACAAA -
 S C V H A R M Q P C C C S R Y V G Y V W -
 1441 GGATCAGGGATAATGATGTAACATTGAAATTATTACACTCTGAGAATAAATTAGAG 1500
 c CCTAGTCCCTATTACTACACTTGAAACTTTAATTAAATGAGACTCTTATTTAATCTC -
 I R D N D V N F E L I I T L * E * I R E -
 1501 AGTTTATTATGCCAAAAAA 1522
 c TCAAAATAACGTTTTTTTTT -
 F I M Q K K -

FIGURE 13-2

1 ACAACAAACCAAGTGCCTGGTTACGTGTATTCACTATGGCCACCCCTCTCTAAACTAGCTT + 60
 c TGTTGTTGGTCACGGACCAAACTCCACATAAGTGTACCGGTGGGAGAGATTTGATGAA
 N K P V P G L G V F T H A T L S K L A S -
 61 CCCCCAACCAATAACACCTCCACTCTCCCCGCTCCCTCTTGCATGCTCTCTCTCACCC + 120
 c GGGGTTGGTTATGTGGAGGTGAGAGGGGOGAGGGAGGAACGTACGAGGAAGAGAGTGG
 P T N M T S T L P A P S F A C S P S H Q -
 121 AAAAGCTTCACCAACCCCTCCCTCTCCCCCTGAGGGGCTCCAAACCAACCCCGTCATAAGA + 180
 c TTTTCGAAAGTGGTGGTGGAGGGAGAGGGGACATCCCCAGGGTTGGTGGGGCAGTATTCT
 K L H H K L P L P C R G P K P P R H K I -
 181 TCTCATGCAAATCTAAGGAGCAACAGAGAAATGCCGACAAGCCTGGGGCCGATGACCC + 240
 c AGAGTACGGTTAGATTCTCGTTCTCTTACGGCTGTTGGACGCCGGCGTAGCTGG
 S C K S K E Q Q E N A D K P A G R I D R -
 241 GCCGGCGACCTACTCTGGGCTCGGGGGCTTACGGTGCCACCACTGGGCTCGGCTCA + 300
 c CGGGCTGGATGAGGACCCGGAGCCCCCGAAATGCCACGGTGGTGACCCGAGCCGGAGT
 R D L L L G L G G L Y G A T T G L G L N -
 301 ACCGTCGAGCGGCCGCCGCCCTATCTGGCTCCCGACCTCTCAACTTGTGGCCGCCCTG + 360
 c TGGCAGCTCGCCGGCGGGGATAGGACCGAGGGCTGGAGAGTTGAACACCCGGCGAC
 R R A A A A P I L A P D L S T C G P F A -
 361 CCGACCTCCCTGCTCCGCCGACCTGACAGTTGCTGCCCCCTATACCAATCCACCATCA + 420
 c GGCCTGGAGGGACGGAGGGCGCTGGCTGCTAAAGACGGGGGGTATGGTTAGGTGGTAGT
 D L P A S A R P T V C C F P Y Q S T I I -
 421 TCGTCCTCAAGCTCCCCCGGATCTGCTCCGCTTCGGGCTGGGCTGCGGCCACTTGG + 480
 c ACCAGAAAGTTCGAGGGGGCGCTAGACGAGGGGAGGGCAGGGCAGCGGGGTGAACC
 V F K L P P R S A P L R V R P A A H L V -
 481 TTGACGCCGACTACCTGGCAAGTATAAGAAGGCGGTGGACTCATGAGGGCCCTGCCGG + 540
 c AACTCCGGCTGGACCGGTTCAATATCTCCGCACGCTGGACTACCTGGGGACGGCC
 D A D Y L A K Y K R A V E L M R A L P A -
 541 CCGACGACCCCGCAACTTGTACAGCAAGCGAAAGTGCACACTGTGGTACTGCCGACGGG + 600
 c GGCCTGCTGGGGCGCTGGACCATGTCGTTGGCTTACGTGACACGCCATGACGCTGCCGC
 D D P R N F V Q Q A K V H C A Y C D G A -
 601 CGTACGACCAAACTGGCTCCCCGATCTGGAGATCCAGATCCACAACTCGTGGCTCTTCT + 660
 c GCATGCTGGTTAGCGGAAGGGGCTAGAGCTCTAGGTCTAGGTGGTGGAGCACCGAGAAGA
 Y D Q I G F P D L E I Q T H N S W L F P -
 661 TTGCTGGCACCGGCTACCTCTACTTCACGAGCGCATACTCGGGAAACTTATCGGTG + 720
 c AAGGAACCGTGGCCAAGATGGAGATGAAGTGTGCTGGCTATGACCCCTTGAATAGCCAC
 P W H R F Y L Y F N E R I L G K L I G D -
 721 ACGACACGTTGGCGCTGCCCTCTGGAACTGGGACGCCGGGGGGCATGCAAGTCCCGT + 780
 c TGCTGTGCAAGCGCGACGGAAAGACCTTGACCCCTGCCGCCGGGGCGTACGTCAAGGGCA
 D T F A L P F W N N D A P G G H Q F P S -

FIGURE 14-1

24/27

CTATCTACACAGACCCCTTCATCCTCGCTATATGACAAGCTGGTGATGCGAAGCACCAGC
781 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 840
c GATAGATGTGTCGGAAAGTAGGAGCGATAACTGTTGACGCACAGCTTCGTGGTCG
I Y T D P S S S L Y D K L R D A K H Q P -
CGCCGACTTTGATTGACCTCGACTACAAATGGCACA
841 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 875
c GCGGCTGAAACTAACTGGAGCTGATGTACCGTGT
P T L I D L D Y N G T -

FIGURE 14-2

25/27

GACCACCCATAGATGATGGCTCTCTGCCCTGGCTAGTCCTCCACCTCCACCAACC
1 CTGGTGGGTATCTACTACCGAAGAGACGGGACAGATCAGAAGGGGGAGGTGGTGGTGG 60
K A S L A L S S L P T S T T -

AAAAAAACCTTATTTCCAAAACATCTCCATGTTAACCCATCCATGGCTTCAAAGTT
61 TTTTTGGAAATAAAAGTTTGTAGGAGCGTACAAATGGTAAAGGTAGGAAAGTTCAA 120
K K P L F S K T S S H V K P P H R P K V -

TCATGCAATGCACCCGCTGATAACAAATGACAAAACCGTCATAAATTCGATACCCCAAAC
121 AGTACGTTACGCTGGGCGACTATTGTTACTGTTTGGCACTTATAAGACTATGGGTTTC 180
S C N A P A D N N D K T V N N S D T P K -

CTCATACTACCCAAAACACCACTTGAACACGGAGAACGTAGACAGGGAGAACTTGCTTCG
181 GAGTATGATGGTTTGTGGTGAACCTTGGCTCTGCACTCTGCTCTTGAACGAAGAC 240
L I L P K T P L E T Q N V D R R R N L L -

GGACTCGGAGGCTCTACGGCGCTGCCAATTCGACGACCATTCGTCAGCCTTGGCATT
241 CCTGAGCTTCCACAGATGCCGCGACGGTGTGACTGCTGGTAAGCGACTGGAAACCGTAA 300
G L G G L Y G A A N L T T I P S A F G I -

CCCATCGCTCCAGACAAATTTCAAGCTGTTGCTCCGACTTCACAACTTAAGGAAC
301 GGGTAGCCACGGAGGTCTTTATAAAGCTGACACAAACGACCGCTGAAGTTGGATTCCTG 360
P I A A P D N I S D C V A A T S N L R N -

AGCAAAAGACGTATAACGGGACTAGCGCTTCTCCCTGGCTGCTTCACAAACAAACCA
361 TCCCTTCTGGATATTCCTGATGACACACAGGAGGCCACAAAGTTGTTGTTGGT 420
S K D A I R G L A C C P P V L S T N K P -

ATGGATTACGTCTCTCTCAAAACCTGATTCGTTGCTGGACCAAGCTGCACAGAAAGCC
421 TACCTAATGCAAGGAAGGACTTGGGACACTAAGCACAAAGCTGGTCAGCTGTCTTCGG 480
H D Y V L P S N P V I R V R P A A Q R A -

ACTCCGATTACACTGCTAACTATCACAAAGCAATTCAAGCCATGAAGGATCTCCCGAG
481 TGACGGCTAATGTGACCAATTCAAGTTGTTCTTAAGTTGGTACTTCCTAGAGGGGCTC 540
T A D Y T A K Y Q Q A I Q A M K D L ? E -

GACCACCCACATAGCTGGAAAGCAACAAAGCAAGATTCACTGTCCTATTGCAACGGTGGT
541 CTGGTGGGTGATCGACCTTCTGGTGTGCTCTAAGTGACACAAATAACGTTGCCACCA 600
O H P H S W K Q Q G K I H C A Y C N G G -

TACAAATGAAACAAGTGGTTACCCGAAATTCAACTTCAGATTCAAACTCATGGCTC
601 ATGTTAGTTCTCTGTTCAACCAATGGGCTTAAATCTGAAAGCTCAAGTGTGAGTACCGAC 660
Y N O E O S G Y P N L Q L Q I H N S H L -

TCTTTCTTCCACCGGTGGTACCTCTATTCTACGGAGAAGATATTGGGAAGTTGATT
651 AAGAAAGGAAAGGTGGCCACCATGGGAGATAAGATGCTCTCTATAACCCCTCAACTAA 720
F F P F H R W Y L Y F Y E K I L G N L I -

AATGATCCAACTTTCGCTCACCTTACTGGAACTGGGATPACCTTACTGGAAATGGTTATT
721 TTACTAGGTGAAAGCGAGATGGAAATGACCTTGACCTTATGGGATGACCTTACCAATA 780
N D P T F A I P Y W N M D N S T G M V I -

CCTCCCATGTCGAAACAGAACGAAACAAACTACTCTCTGTTGACCTTAAAGGAAATGGG
781 CGACGGCTACAAACCTTCTCTTGTGATTGAGAGACAAACTGGGAAATCCCTACCC 840
P A M F E D N S K T N S L F D P L R D A -

FIGURE 15-1

AACACCTCCCACCTCTATCTTGTGAATATGCTGGTGCAGACACTCGTGCACCT
 841 ----- 900
 TTTCTGGAGGGTGGAAAGATAGAAACTACAACTTATACGACCACCTCTGTGACCAACGGTGA
 K K L P P S I F D V E Y A G A D T G A T -

 TGTATAGACCAAGATAGCCATTAACTGTCTTCAATGTACAGACAGATGGTACCAACTCC
 901 ----- 960
 ACATATCTGGTCTATCGGTAAATTAGACAGAAGTTACATGCTGTCTACCAAGTGGTGGAGG
 C I D Q I A I N L S S M Y R Q H V T N S -

 ACTGATAACAAAACGATTCTCGGTGGCGAATTGTAGCTGGAAATGACCCCTCTTGGGAGC
 961 ----- 1020
 TGACTATCTTTCTAAGAAGCCACCGCTAAACATCGACCTTACTGGGAGAACGCTCG
 T D T K R F F G G E F V A G N D P L A S -

 GAGTTCAACGTAGCTGGGACCGTAGAAGCTGGGGTCACACTGGGCTCACCGCTGGGTC
 1021 ----- 1080
 CTCAGTTGCATCGACCCCTGGCATCTTGGACCCCAAGTGTGACGCCGAGTGGGAGACCCAC
 E F N V A G T V E A G V H T A A H R W V -

 GGTAAATTCTAGGATGGCCAACACCGAAGACATGGGAACCTCTACTCCGAGGATATGAT
 1081 ----- 1140
 CCATTAAAGATCTTACCGGTTGTGCTTCGTACCCCTTGAAGATGAGGGCTCTATACTA
 G N S R M A N S E D M G N F Y S A G Y D -

 CCTCTCTTACGTCCACCATCGGAATGTGACAGGAATGTGGCAATCTGGAAAGATATT
 1141 ----- 1200
 GGAGAGAAAATGCAAGGTGGTACCGTACAGCTGTCTACACCGTTAGACCTTCTATAAA
 P L F Y V H K A N V D R H W Q I W K D I -

 GACAAGAAGACACACAAGGATCGACCTCTGGGACTGCTAAATGCATCATACGTGTTT
 1201 ----- 1260
 CTGTTCTCTGTGTGTTCTAGGCTGGAGACCGCTGACCGATTACGTACTATGCACAAA
 D K X T H K D P T S G D W L N A S Y V F -

 TACGATGAGAAATCTGTACCTGTCTACACCGAGACTGTGAGACATTAATCGG
 1261 ----- 1320
 ATGCTACTCTTACTTTAGAACATGCACAGATGTGGCTCTGACACATCTGTAAATTAGCC
 Y D E N E N L V R V Y N R D C V D I N R -

 ATGGGATATGACTACGAAAGCTCGAACATCCCCTGGATCCGTAGCTGGGGACTGACAT
 1321 ----- 1380
 TACCCCTATACTGTGCTTCCACTGGTACCTAGGCATCAGCCGGCTGACGTGTA
 M G Y D Y E R S A I P W I R S R P T A H -

 CGCAAGGGGGCGAACCTTCTGTCTAAGTCTGCTGGAAATCTGGCAGAACGGTGGAGGATATC
 1381 ----- 1440
 CGCTTCCCCCGCTTCCAAACGACCTTCAGACGACCTTACGCACCTTCCACCTCCATAG
 A K G A N V A A K S A G I V Q K V E D I -

 GTATTCGGCTGAAGTTAACAAAGATAGTGAAGGTTCTAGTGAAGAGGGCAGCTACAAAC
 1441 ----- 1500
 CATAACCCCCCACTTCATTTCTATCACCTCCAAAGATCACTTCTCCCGATGATTTG
 V F P L K L N K I V X V L V K R P A T N -

 AGGACCAAGGAGGGAAAGGAGAAACCAATGAGCTGTGTGTAATGGAATCACGT
 1501 ----- 1560
 TCTCTGGTCTCTCCCTTCCCTTCTACTGACAAAGACTACCTTACTGCAAA
 R T K E G K A N E L L E V N G I T F -

 GATGCTGAGCGGTTCTAAAGATTGACGTGTTGTCAACGACGTGACGGATGGAATTAG
 1561 ----- 1620
 CTACGACTCGECAAGGAGTTCTACTGACAAAGACTTCTGACGAGCTACCTTACTGCAAA
 D A E R F L K I D V F V N D V D O G I Q -

 ACCACCCCTGCTGATAGTGAAGTTCTGGTGTGTTCCACAGTGGCACATAACCATGCC
 1621 ----- 1680
 CGCTGGGAGGACTATCACTCAAAACGACCACTCAAGGCGTGTGACGCTATGGTACCCG
 T T A A D S E F A G S F A Q L P H N H G -

FIGURE 15-2

1681 GACAAGATGTTATGAGGAGTGGGGAGCGGTCGGATCACGGACCTTTGGAAGACATT 1740
 CTGTTCTACAAATACTCTCACCCCGTCGCAAGCCCTAGTGCCCTCGAGAACCTCTGTAA
 D K M F M R S G A A F G I T E L L E D I -
 1741 GAAGCTGAAGGTGATGACTCTGTTGTTGACATTGGTGCCGAGAACAGGGTGTGATGAA 1800
 CTTCGACTTCCACTACTGAGAACACACACTGTAACCAAGGGCTCTGTCACACTACTT
 E A E G D D S V V V T L V P R T G C D E -
 1801 GTAACTATTGGCGAGATCAAGATTCAAGCTGGTTCCTATTGTTAAAGTCTATTGAAGTA 1860
 CATTGATAACCGCTCTAGTTCAAGTGGACCAAGGTAAACAAATTCAAGATAACCTTCATT
 V T I G E I K I Q L V P I V -
 1861 TGCATTTCAATTGTCATTAGTATGCATGGTACGTAATCTGTTGCTGCTGGTTATC 1920
 ACGTAAAGTTAACAGTAATCATACGTACCCATGCATTAGACAAACGGACAGACCAATAG
 -
 1921 GAGGATTTTGATGTTCTGTAACCAATAATAAGGATTGTCATTCCATGTTGGAATCG 1980
 CTCCCTAAACATACAAAGAGCATTGGTTATTATTCCTAACAGTAAGGTACAAACCTTAGC
 -
 1981 TGTAACCGCAGGCATGCATATGTTGATTGTTATTATTACTTGAAAGCACTCTGTTTAG 2040
 ACATGGCGTCCGTACGTACAACTACAAATAAAATGAACCTCGTGAAGACAAATC
 -
 2041 TAaaaaaaaaaaaaaa 2057
 ATTTTTTTTTTTTTT

FIGURE 15-3